

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

1. (Currently Amended) A method of real time optimizing transmission of a number of multimedia data packets between a multimedia source device and a multimedia display device coupled by way of a unidirectional main link arranged to carry the multimedia data packets from the multimedia source device and the multimedia display device and a separate bi-directional auxiliary channel arranged to transfer information between the multimedia source device and the multimedia display device, comprising:

providing a test pattern by the multimedia source device on the main link;

determining a transmission quality factor of the main link by determining a bit error rate by the multimedia display device based upon the test pattern;

sending the bit error rate to the source device by way of the auxiliary channel; ~~and~~

optimizing the transmission of the multimedia data packets based upon the transmission quality factor if the bit error rate is greater than a predetermined threshold value bit error rate; **and**

detecting a hot plug event that automatically determines when an active display device is connected to the main link and the auxiliary link; and

commencing the optimization immediately subsequent to the detection of the hot plug event.

2. (Canceled).

3. (Canceled).

4. (Previously Presented) A method as recited in claim 1 wherein the optimizing further comprises:

when the bit error rate is determined to be greater than the predetermined threshold bit error rate, then

determining if the transmission rate of the multimedia data packets on the main link is greater than a minimum transmission rate.

5. (Original) A method as recited in claim 4, wherein when the transmission rate is greater than the minimum transmission rate then,
reducing the main link transmission rate; and
determining the bit error rate based upon the reduced main link transmission rate.

6. (Original) A method as recited in claim 1, wherein the bi-directional auxiliary channel is formed of a uni-directional back channel configured to carry information from the display device to the source device and a uni-directional forward channel included as part of the main channel for carrying information from the source device to the display device in concert with the back channel.

7. (Original) A method as recited in claim 1, wherein the number of multimedia data packets are divided into a number or associated multimedia data packets streams.

8. (Original) A method as recited in claim 7, wherein the main link unit further comprises:

a number of virtual links each being associated with a particular one of the multi media data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate.

9. (Original) A method as recited in claim 5, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths.

10. (Original) A method as recited in claim 8 wherein each of the virtual link rates associated with each of the virtual links are optimized.

11. (Canceled).

12. (Currently Amended) An apparatus for continuous optimizing transmission of a number of multimedia data packets between a multimedia source device and a multimedia display device coupled by way of a unidirectional main link arranged to carry the multimedia data packets from the multimedia source device and the multimedia display device and separate a bi-directional auxiliary channel arranged to transfer information between the multimedia source device and the multimedia display device, comprising:

means for providing a test pattern by the multimedia source device on the main link;

means for determining a transmission quality factor of the main link by determining a bit error rate by the multimedia display device based upon the test pattern;

means for sending the bit error rate to the source device by way of the auxiliary channel; **and**

means for optimizing the transmission of the multimedia data packets based upon the transmission quality factor if the bit error rate is greater than a predetermined threshold value bit error rate; **and**

means for detecting a hot plug event that automatically determines when an active display device is connected to the main link and the auxiliary link; and

means for commencing the optimization immediately subsequent to the detection of the hot plug event.

13. (Canceled).

14. (Canceled).

15. (Previously Presented) An apparatus as recited in claim 14 wherein the optimizing further comprises:

means for determining if the transmission rate of the multimedia data packets on the main link is greater than a minimum transmission rate when the bit error rate is determined to be greater than the predetermined threshold bit error rate.

16. (Original) An apparatus as recited in claim 15, wherein when the transmission rate is greater than the minimum transmission rate then,

means for reducing the main link transmission rate; and

means for determining the bit error rate based upon the reduced main link transmission rate.

17. (Original) An apparatus as recited in claim 12, wherein the bi-directional auxiliary channel is formed of a uni-directional back channel configured to carry information from the display device to the source device and a uni-directional forward channel included as

part of the main channel for carrying information from the source device to the display device in concert with the back channel.

18. (Original) An apparatus as recited in claim 12, wherein the number of multimedia data packets are divided into a number of associated multimedia data packets streams.

19. (Original) An apparatus as recited in claim 18, wherein the main link unit further comprises:

a number of virtual links each being associated with a particular one of the multi media data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate.

20. (Original) An apparatus as recited in claim 16, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths.

21. (Original) An apparatus as recited in claim 19 wherein each of the virtual link rates associated with each of the virtual links are optimized.

22. (Original) An apparatus as recited in claim 12, further comprising:
means for detecting a hot plug event that automatically determines when an active display device is connected to the main link and the auxiliary link; and
means for commencing the optimization immediately subsequent to the detection of the hot plug event.

23. (Currently Amended) Computer program product executable by a processor for real time optimizing transmission of a number of multimedia data packets between a multimedia source device and a multimedia display device coupled by way of a unidirectional main link arranged to carry the multimedia data packets from the multimedia source device and the multimedia display device and a separate bi-directional auxiliary channel arranged to transfer information between the multimedia source device and the multimedia display device, comprising:
computer code for providing a test pattern by the multimedia source device on the main link;

computer code for determining a transmission quality factor of the main link by determining a bit error rate by the multimedia display device based upon the test pattern;

computer code for sending the bit error rate to the source device by way of the auxiliary channel by the multimedia display device;

computer code for optimizing the transmission of the multimedia data packets based upon the transmission quality factor by the multimedia source device if the bit error rate is greater than a predetermined threshold value bit error rate; ~~and~~

detecting a hot plug event that automatically determines when an active display device is connected to the main link and the auxiliary link;

commencing the optimization immediately subsequent to the detection of the hot plug event; and

computer readable medium for storing the computer code.

24. (Canceled).

25. (Canceled).

26. (Previously Presented) Computer program product as recited in claim 23 wherein the optimizing further comprises:

computer code for determining if the transmission rate of the multimedia data packets on the main link is greater than a minimum transmission rate when the bit error rate is determined to be greater than the predetermined threshold bit error rate.

27. (Original) Computer program product as recited in claim 26, wherein when the transmission rate is greater than the minimum transmission rate then,

computer code for reducing the main link transmission rate; and

computer code for determining the bit error rate based upon the reduced main link transmission rate.

28. (Original) Computer program product as recited in claim 23, wherein the bi-directional auxiliary channel is formed of a uni-directional back channel configured to carry information from the display device to the source device and a uni-directional forward channel included as part of the main channel for carrying information from the source device to the display device in concert with the back channel.

29. (Original) Computer program product as recited in claim 23, wherein the number of multimedia data packets are divided into a number of associated multimedia data packets streams.

30. (Original) Computer program product as recited in claim 29, wherein the main link unit further comprises:

a number of virtual links each being associated with a particular one of the multi media data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate.

31. (Original) Computer program product as recited in claim 27, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths.

32. (Original) Computer program product as recited in claim 30 wherein each of the virtual link rates associated with each of the virtual links are optimized.

33. (Canceled).

34. (Currently Amended) A method of real time optimizing transmission of a number of multimedia data packets between a multimedia source device and a multimedia display device coupled by way of a unidirectional main link arranged to carry the multimedia data packets from the multimedia source device and the multimedia display device and a bi-directional auxiliary channel arranged to transfer information between the multimedia source device and the multimedia display device, comprising:

- (a) providing a test pattern by the multimedia source device on the main link;
- (b) determining a bit error rate of the main link based upon the test pattern;
- (c) sending the bit error rate to the source device by way of the auxiliary channel;
- (d) determining if the bit error rate is greater than a predetermined threshold value bit error rate; and
- (e) optimizing the transmission of the multimedia data packets based upon the determining (d) when the bit error rate is determined to be greater than the predetermined threshold bit error rate, then

determining if the transmission rate of the multimedia data packets on the main link is greater than a minimum transmission rate;

detecting a hot plug event that automatically determines when an active display device is connected to the main link and the auxiliary link; and

commencing the optimization immediately subsequent to the detection of the hot plug event.

35. (Canceled).

36. (Previously Presented) A method as recited in claim 34, wherein when the transmission rate is greater than the minimum transmission rate then,
reducing the main link transmission rate; and
determining the bit error rate based upon the reduced main link transmission rate.

37. (Canceled).